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TWO-STAGE DENITRATION (1)

Trials on the two-stage denitration (2) were continued. In a first fermenter, running at dilution rates of 0.13 hr^{-1} or 0.24 hr^{-1} , a total denitration was achieved using the minimal amount of sugar. The denitrated extract, containing also the yeast cells, was mixed with untreated extract without additives. This mixture was fed into a second fermenter at a dilution rate of 0.1 hr^{-1} . The following additional results were obtained :

Table 1 : Two-Stage Denitration at Different Dilution Rates and Percentages of Treated Extract

D (hr^{-1}) First fermenter	Feed into the 2nd Fermenter		Final de- nitration %	Sugar * saving %
	Denitrated extract %	Untreated extract %		
0.13	75	25	87	12
0.13 **	75	25	100	25
0.24	50	50	71	21

* Percentage of nitrate that has been assimilated without adding extra sugar.

** Fed-batch system in the second fermenter. The fermenter was totally emptied as soon as it was full.

Trials were undertaken where the quantity of glucose supplied to the first fermenter was reduced. As a result the denitration was not complete. For this reason, the extract was passed through a second fermenter to see whether total denitration could thus be brought about without any extra glucose being added.

The glucose : nitrate nitrogen ratio was lowered in several steps from the normal 36.9 to 25.8. The first results indicated that in the second fermenter denitration could not be improved to a considerable extent. However, the results also showed that under the conditions used the sugar supplied to the first fermenter may be reduced without negatively influencing the denitration. The trials will be repeated.

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